

1 WHAT IS CLAIMED IS:

1 1. A method for controlling ID information stored in a storage
2 medium in conjunction with a terminal for reading information from the storage medium
3 and used to catalog information for the storage medium into the control apparatus
4 wherein:

5 in an operation to catalog information to be cataloged for the
6 storage medium into the control apparatus, the terminal receives the information to be
7 cataloged, reads the ID information from the storage medium and transmits the
8 information to be cataloged and the ID information to the control apparatus; and

9 the control apparatus catalogs the information to be cataloged and
10 the ID information therein by associating the information to be cataloged with the ID
11 information, and

12 in an operation to examine information already cataloged in the
13 control apparatus for the storage medium, the terminal reads the ID information from the
14 storage medium and transmits the ID information to the control apparatus;

15 the control apparatus transmits the information already cataloged
16 therein and associated with the ID information to the terminal; and

17 the terminal receives the already cataloged information from the
18 control apparatus.

1 2. A method of cataloging information for a storage medium into a
2 control apparatus according to claim 1 wherein:

3 the storage medium is used for storing authentication information
4 for authenticating the ID information along with the ID information in advance, wherein
5 the ID information can be authenticated by using a key owned by the control apparatus;

6 in an operation to catalog information to be cataloged for the
7 storage medium into the control apparatus, the terminal receives the information to be
8 cataloged, reads the ID information and the authentication information from the storage
9 medium and transmits the information to be cataloged, the authentication information and
10 the ID information to the control apparatus; and

11 the control apparatus authenticates the ID information on the basis
12 of the authentication information by using the key and catalogs the information to be

13 cataloged and the ID information therein by associating the information to be cataloged
14 with the ID information provided that a result of authentication indicates that the ID
15 information is valid, and

16 in an operation to examine information already cataloged in the
17 control apparatus for the storage medium, the terminal reads the ID information and the
18 authentication information from the storage medium and transmits the ID information and
19 the authentication information to the control apparatus;

20 the control apparatus authenticates the ID information on the basis
21 of the authentication information by using the key and transmits information already
22 cataloged therein and associated with the ID information to the terminal provided that a
23 result of authentication indicates that the ID information is valid; and

24 the terminal receives the already cataloged information from the
25 control apparatus.

1 3. A method of cataloging information for a storage medium into a
2 control apparatus according to claim 1 wherein:

3 the storage medium is used for storing attribute information along
4 with the ID information in advance;

5 the control apparatus controls pieces of ID information of a
6 plurality of the storage mediums and pieces of information each cataloged for one of the
7 storage mediums by associating the pieces of ID information and the pieces of cataloged
8 information with pieces of attribute information stored in the storage mediums;

9 the terminal controls some of the pieces of ID information and
10 some of the pieces of cataloged information controlled by the control apparatus and
11 associated with at least one of the pieces of attribute information; and

12 in an operation to examine information already cataloged in the
13 control apparatus for a particular one of the storage mediums, the terminal reads ID
14 information and attribute information from the storage medium, checking whether the ID
15 information read from the particular storage medium and associated with the attribute
16 information also read from the particular storage medium is one of the pieces of ID
17 information controlled by itself, and

18 if the ID information read from the particular storage medium and
19 associated with the attribute information also read from the particular storage medium is

not one of the pieces of ID information controlled by itself, the terminal executes the steps of:

acquiring ID information and cataloged information associated with the attribute information read from the particular storage medium from the control apparatus;

using the ID information and the cataloged information acquired from the control apparatus to update the pieces of ID information and the pieces of cataloged information controlled by itself; and

searching the pieces of ID information controlled by itself for a piece matching with the ID information read from the particular storage medium; and

acquiring one of the pieces of cataloged information controlled by itself and associated with the piece of ID information matching with the ID information read from the particular storage medium, but

if the ID information read from the particular storage medium and associated with the attribute information also read from the particular storage medium is one of the pieces of ID information controlled by itself, on the other hand, the terminal executes the steps of:

searching the pieces of ID information controlled by itself for a piece matching with the ID information read from the particular storage medium; and

acquiring one of the pieces of cataloged information controlled by itself and associated with the piece of ID information matching with the ID information read from the particular storage medium.

4. A method of cataloging information for a storage medium into a control apparatus according to claim 1 whereby:

the control apparatus controls ID information of the storage medium and information cataloged for the storage medium by associating the ID information and the cataloged information with user ID information,

in an operation to catalog user ID information into the control apparatus, the terminal receives the user ID information, reads the ID information from the storage medium and transmits the user ID information and the ID information to the control apparatus; and

the control apparatus catalogs the user ID information and the ID information therein by associating the user ID information with the ID information, and

12 in an operation to examine user ID information already cataloged
13 in the control apparatus for the storage medium, the terminal reads the ID information
14 from the storage medium and transmits the ID information to the control apparatus; and
15 the control apparatus transmits the user ID information already
16 cataloged therein and associated with the ID information to the terminal.

1 5. A method of cataloging information for a storage medium into a
2 control apparatus according to claim 1 wherein the terminal displays the already
3 cataloged information.

1 6. A control system comprising:
2 a terminal capable of making an access to a storage medium used
3 for storing ID information; and
4 a control apparatus for controlling the ID information of the storage
5 medium, and wherein;
6 the control apparatus comprises:
7 a database used for cataloging ID information of the storage
8 medium and information to be cataloged for the storage medium with the ID information
9 associated with the information cataloged for the storage medium; and
10 a search means for searching the database for cataloged
11 information associated with ID information received from the terminal and transmitting
12 the cataloged information to the terminal, and wherein
13 the terminal comprises:
14 a reading means for reading ID information from the storage
15 medium and transmitting the ID information to the control apparatus; and
16 an acquirement means for acquiring cataloged information
17 transmitted from the control apparatus.

1 7. A control system comprising:
2 a terminal capable of making an access to one of a plurality of
3 storage mediums used for storing ID information and attribute information; and
4 a control apparatus for controlling pieces of ID information of a
5 plurality of the storage mediums, wherein;
6

7 the control apparatus comprises:

8 a database used for cataloging pieces of ID information, pieces of
9 attribute information of the storage mediums and pieces of information each cataloged for
10 one of the storage mediums by associating the pieces of ID information and the pieces of
11 attribute information with the pieces of cataloged information;

12 a searcher for searching the database for a particular one of the
13 pieces of cataloged information and a particular one of the pieces of ID information
14 associated with attribute information received from the terminal and transmitting the
15 particular piece of cataloged information and the particular piece of ID information to the
16 terminal, and

17 the terminal comprises:

18 a temporary database used for cataloging some of the pieces of ID
19 information and some of the pieces of cataloged information cataloged in the database of
20 the control apparatus and associated with at least one of the pieces of attribute
21 information;

22 a reader for reading ID information and attribute information from
23 the storage medium associated with the terminal;

24 an acquirer for searching the temporary database for one of the
25 pieces of ID information and one of the pieces of cataloged information matching with
26 the attribute information read by the reader; and

27 a transmitter to transmit the attribute information read by the reader
28 to the control apparatus to acquire ID information and catalogue information for the
29 attribute information to be used for updating the contents of the temporary database in
30 case the acquirer does not find one of the pieces of ID information and one of the pieces
31 of cataloged information matching with the attribute information in the temporary
32 database.

1 8. A control system according to claim 6 wherein:

2 the terminal further comprises a receiver which receives
3 information to be cataloged for the storage medium, and the reader reads ID information
4 from the storage medium and transmits the information to be cataloged and the ID
5 information to the control apparatus upon receiving information to be cataloged by the
6 receiver; and

7 the control apparatus further comprises a cataloging/updating
8 apparatus to catalogue the information to be cataloged and the ID information received
9 from the terminal in the database.

1 9. A control system according to claim 8 wherein the storage medium
2 comprises:
3 a chip for storing ID information in advance, the chip mounted on a
4 sheet; and
5 an antenna device mounted on the sheet and used to provide power
6 by using an electromagnetic signal received.

1 10. A control system according to claim 6 wherein the terminal further
2 comprises a display to display cataloged information acquired by the acquirer.

1 11. A control apparatus employed in a control system used for
2 controlling ID information stored in a storage medium and provided with a terminal
3 capable of making an access to the storage medium, the control apparatus comprising:
4 a database used for cataloging ID information of the storage
5 medium read from the storage medium and transmitted to the control apparatus and
6 information to be cataloged for the storage medium with the ID information associated
7 with the information cataloged for the storage medium; and
8 a searcher for searching the database for cataloged information
9 associated with ID information received from the terminal and transmitting the cataloged
10 information to the terminal.

1 12. A control apparatus according to claim 11 wherein:
2 the database is also used for cataloging attribute information in
3 addition to ID information of the storage medium read by the terminal from the storage
4 medium and transmitted to the control apparatus and information to be cataloged for the
5 storage medium with the attribute information and the ID information associated with the
6 information cataloged for the storage medium; and
7 a searcher searches the database for ID information and cataloged
8 information associated with attribute information received from the terminal and
9 transmits the ID information and the cataloged information to the terminal.

1 13. A terminal employed in a control system also employing a control
2 apparatus for controlling ID information stored in storage mediums and provided with
3 capability of making an access to one of the storage mediums associated with the
4 terminal, the terminal comprising:

5 a temporary database used for cataloging some pieces of ID
6 information of the storage mediums cataloged in a database of the control apparatus and
7 some of pieces of information also cataloged in the database of the control apparatus for
8 the storage mediums and associated with at least one of pieces of attribute information
9 also cataloged in the database;

10 a reader to read ID information and attribute information from the
11 storage medium associated with the terminal;

12 an acquirer to search the database for one of the pieces of ID
13 information and one of the pieces of cataloged information matching with the attribute
14 information read by the reading means; and

15 a transmitter to transmit the attribute information read by the reader
16 to control apparatus to acquire ID information and cataloged information for the attribute
17 information for updating the contents of the temporary database when the acquiring
18 means does not find one of the pieces of ID information and one of the pieces of
19 cataloged information matching with the attribute information in the temporary database.

1 14. A terminal system according to claim 13 wherein the terminal
2 further comprises a display to display cataloged information acquired by the acquirer.

1 15. A control apparatus according to claim 11 wherein the apparatus
2 further comprises a cataloger for cataloging information to be cataloged and ID
3 information received from the terminal in the database by associating the cataloged
4 information with the ID information.

1 16. A program storage medium for storing a program to be loaded for
2 execution into a control apparatus for controlling ID information of a storage medium
3 stored in a storage medium in conjunction with a terminal for reading information from
4 the storage medium in order for the terminal to catalog information for the storage
5 medium into the control apparatus wherein the program is executed so that;

6 in an operation to catalog information to be cataloged for the
 7 storage medium into the control apparatus, the terminal receives the information to be
 8 cataloged, reads the ID information from the storage medium and transmits the
 9 information to be cataloged and the ID information to the control apparatus; and
 10 the control apparatus catalogs the information to be cataloged and
 11 the ID information therein by associating the information to be cataloged with the ID
 12 information, whereas
 13 in an operation to examine information already cataloged in the
 14 control apparatus for the storage medium,
 15 the terminal reads the ID information from the storage medium and
 16 transmits the ID information to the control apparatus;
 17 the control apparatus transmits the information already cataloged
 18 therein and associated with the ID information to the terminal; and
 19 the terminal receives the already cataloged information from the
 20 control apparatus.

1 17. A control system for controlling information cataloged for a
 2 storage medium used for storing ID information, the control system comprising:
 3 a control apparatus for controlling ID information of the storage
 4 medium; and
 5 a terminal for reading information from the storage medium,
 6 wherein:
 7 the terminal comprises:
 8 a reader to read ID information from the storage medium;
 9 a transmitter to transmit the ID information and information
 10 received by the terminal to be cataloged to the control apparatus; and
 11 an acquirer to acquire cataloged information associated with the ID
 12 information from the control apparatus, wherein the control apparatus comprises:
 13 a cataloguer to cataloging the information to be cataloged and the
 14 ID information received from the terminal by associating the information with the ID
 15 information; and
 16 a transmitter to transmit the cataloged information to the terminal.
 17

1 18. A control system according to claim 17 wherein:
2 the storage medium stores authentication information for
3 authenticating the ID information along with the ID information, wherein the ID
4 information can be authenticated by using a key owned by the control apparatus;
5 the terminal includes a reader to read ID information and
6 authentication information from the storage medium and a transmitter to transmit the ID
7 information and the authentication information, along with information received by the
8 terminal to be cataloged to the control apparatus, and
9 the control apparatus includes an authentication device for
10 authenticating the ID information on the basis of the authentication information by using
11 the key;
12 a cataloging device for cataloging the information to be cataloged
13 and the ID information, by associating the information with the ID information for a
14 result of authentication indicating that the ID information is valid; and
15 a transmitter for transmitting the cataloged information associated
16 with the ID information to the terminal for a result of authentication indicating that the ID
17 information is valid.

1 19. A control system according to claim 17 wherein:
2 the storage medium includes a means for storing attribute
3 information along with ID information in advance;
4 the control apparatus includes a control means for controlling
5 pieces of ID information of a plurality of the storage mediums and pieces of information
6 cataloged for the storage mediums by associating the pieces of ID information and the
7 pieces of cataloged information with pieces of attribute information stored in the storage
8 mediums, and
9 the terminal includes a terminal controller for controlling some of
10 the pieces of ID information and some of the pieces of cataloged information controlled
11 by the controller employed in the control apparatus and associated with at least one of the
12 pieces of attribute information;
13 a reader for reading ID information and attribute information from
14 one of the storage mediums associated with the terminal to examine information
15 cataloged for the storage medium;

an examination device to determine whether the ID information read from the storage medium and associated with the attribute information also read from the storage medium is one of the pieces of ID information controlled by the terminal control device itself;

a transmitter for transmitting the attribute information read by the reader to the control apparatus to acquire ID information and cataloged information for the attribute information to be used for updating the pieces of ID information and the pieces of cataloged information controlled by the terminal control device if the examination device determines that the ID information read from the storage medium and associated with the attribute information also read from the storage medium is not one of the pieces of ID information controlled by the terminal controller; and

an acquirer for searching the pieces of ID information controlled by the terminal control device for a particular one matching with the ID information read from the storage medium and associated with the attribute information also read from the storage medium and acquiring one of the pieces of cataloged information controlled by the terminal control device and associated with the particular piece of ID information in case the examination device determines that the ID information read from the storage medium and associated with the attribute information also read from the storage medium is one of the pieces of ID information controlled by the terminal control device.

20. A control system according to claim 17 wherein:

the control apparatus further comprises a control device for controlling ID information and attribute information of the storage medium by associating the ID information and the attribute information with user ID information which can be set by the user of the storage medium;

the terminal further includes a reading means for reading ID information from the storage medium;

a transmission device for transmitting the ID information and user ID information received by the terminal to the control apparatus in an operation to catalog the user ID information for the storage medium; and

a further transmission device for transmitting the ID information to the control apparatus in an operation to examine user ID information for the storage medium, and

14 the control apparatus includes a cataloging device for cataloging
15 the user ID information by associating the user ID information with the ID information;
16 and
17 a transmission device for transmitting cataloged user ID
18 information associated with the ID information to the terminal.